Translated Protein-Frame: 3-Nucleotide 111 to 1130
mz5004_vh.seq Length: 2691 24/Aug/1999

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     91 GCAACGTGACCACGTCGCAGATGGCCAACGAGCAGGGCTTGTTTG
                               MetAlaAsnGluGlnGlyLeuPheA

    136 ATGTGCACAGCATCCTGCGGGTGGTGCTGGGTGCAAATGGCACCT
        spValHisSerIleLeuArgValValLeuGlyAlaAsnGlyThrT

    181 ACAGCTGCCTGGTGCGCAACCCCGTGCTGCAGCAGGATGCGCACA
        yrSerCysLeuValArgAsnProValLeuGlnGlnAspAlaHisS

    226 GCTCTGTCACCATCACACCCCAGAGAAGCCCCACAGGAGCCGTGG
        erSerValThrIleThrProGlnArgSerProThrGlyAlaValG

    271 AGGTCCAGGTCCCTGAGGACCCGGTGGTGGCCCTAGTGGGCACCG
        luValGlnValProGluAspProValValAlaLeuValGlyThrA

    316 ATGCCACCCTGCACTGCTCCTTCTCCCCCGAGCCTGGCTTCAGCC
        spAlaThrLeuHisCysSerPheSerProGluProGlyPheSerL

    361 TGACACAGCTCAACCTCATCTGGCAGCTGACAGACACCAAACAGC
        euThrGlnLeuAsnLeuIleTrpGlnLeuThrAspThrLysGlnL

    406 TGGTGCACAGTTTCACCGAAGGCCGGGACCAGGGCAGCGCCTATG
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    451 CCAACCGCACGGCCCTCTTCCCGGACCTGCTGGCACAAGGCAATG
        laAsnArgThrAlaLeuPheProAspLeuLeuAlaGlnGlyAsnA

    496 CATCCCTGAGGCTGCAGCGCGTGCGTGTGGCGGACGAGGGCAGCT
        laSerLeuArgLeuGlnArgValArgValAlaAspGluGlySerP

    541 TCACCTGCTTCGTGAGCATCCGGGATTTCGGCAGCGCTGCCGTCA
        heThrCysPheValSerIleArgAspPheGlySerAlaAlaValS

    586 GCCTGCAGGTGGCCGCTCCCTACTCGAAGCCCAGCATGACCCTGG
        erLeuGlnValAlaAlaProTyrSerLysProSerMetThrLeuG

    631 AGCCCAACAAGGACCTGCGGCCAGGGGACACGGTGACCATCACGT
        luProAsnLysAspLeuArgProGlyAspThrValThrIleThrC

    676 GCTCCAGCTACCGGGGCTACCCTGAGGCTGAGGTGTTCTGGCAGG
        ysSerSerTyrArgGlyTyrProGluAlaGluValPheTrpGlnA

    721 ATGGGCAGGGTGTGCCCCTGACTGGCAACGTGACCACGTCGCAGA
        spGlyGlnGlyValProLeuThrGlyAsnValThrThrSerGLnM

    766 TGGCCAACGAGCAGGGCTTGTTTGATGTGCACAGCGTCCTGCGGG
        etAlaAsnGluGlnGlyLeuPheAspValHisSerValLeuArgV
```

Fig. 1

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 811 TGGTGCTGGGTGCGAATGGCACCTACAGCTGCCTGGTGCGCAACC
     alValLeuGlyAlaAsnGlyThrTyrSerCysLeuValArgAsnP

 856 CCGTGCTGCAGCAGGATGCGCACGGCTCTGTCACCATCACAGGGC
     roValLeuGlnGlnAspAlaHisGlySerValThrIleThrGlyG

 901 AGCCTATGACATTCCCCCCAGAGGCCCTGTGGGTGACCGTGGGGC
     lnProMetThrPheProProGluAlaLeuTrpValThrValGlyL

 946 TCTCTGTCTGTCTCATTGCACTGCTGGTGGCCCTGGCTTTCGTGT
     euSerValCysLeuIleAlaLeuLeuValAlaLeuAlaPheValC

 991 GCTGGAGAAAGATCAAACAGAGCTGTGAGGAGGAGAATGCAGGAG
     ysTrpArgLysIleLysGlnSerCysGluGluGluAsnAlaGlyA

1036 CCGAGGACCAGGATGGGGAGGGAGAAGGCTCCAAGACAGCCCTGC
     laGluAspGlnAspGlyGluGlyGluGlySerLysThrAlaLeuG

1081 AGCCTCTGAAACACTCTGACAGCAAAGAAGATGATGGACAAGAAA
     lnProLeuLysHisSerAspSerLysGluAspAspGlyGlnGluI

1126 TAGCCTGACCATGAGGACCAGGGAGCTGCTACCCCTCCCTACAGC
     leAla

1171 TCCTACCCTCTGGCTGCAATGGGGCTGCACTGTGAGCCCTGCCCC
1216 CAACAGATGCATCCTGCTCTGACAGGTGGGCTCCTTCTCCAAAGG
1261 ATGCGATACACAGACCACTGTGCAGCCTTATTTCTCCAATGGACA
1306 TGATTCCCAAGTCATCCTGCTGCCTTTTTTCTTATAGACACAATG
1351 AACAGACCACCCACAACCTTAGTTCTCTAAGTCATCCTGCCTGCT
1396 GCCTTATTTCACAGTACATACATTTCTTAGGGACACAGTACACTG
1441 ACCACATCACCACCCTCTTCTTCCAGTGCTGCGTGGACCATCTGG
1486 CTGCCTTTTTTTCTCCAAAAGATGCAATATTCAGACTGACTGACCC
1531 CCTGCCTTATTTCACCAAAGACACGATGCATAGTCACCCCGGCCT
1576 TGTTTCTCCAATGGCCGTGATACACTAGTGATCATGTTCAGCCCT
1621 GCTTCCACCTGCATAGAATCTTTTCTTCTCAGACAGGGACAGTGC
1666 GGCCTCAACATCTCCTGGAGTCTAGAAGCTGTTTCCTTTCCCCTC
1711 CTTCCTCCTCTTGCTCTAGCCTTAATACTGGCCTTTTCCCTCCCT
1756 GCCCCAAGTGAAGACAGGGCACTCTGCGCCCACCACATGCACAGC
1801 TGTGCATGGAGACCTGCAGGTGCACGTGCTGGAACACGTGTGGTT
1846 CCCCCCTGGCCCAGCCTCCTCTGCAGTGCCCCTCTCCCCTGCCCA
1891 TCCTCCCCACGGAAGCATGTGCTGGTCACACTGGTTCTCCAGGGG
1936 TCTGTGATGGGGCCCCTGGGGGTCAGCTTCTGTCCCTCTGCCTTC
1981 TCACCTCTTTGTTCCTTTCTTTTCATGTATCCATTCAGTTGATGT
2026 TTATTGAGCAACTACAGATGTCAGCACTGTGTTAGGTGCTGGGGG
2071 CCCTGCGTGGGAAGATAAAGTTCCTCCCTCAAGGACTCCCCATCC
2116 AGCTGGGAGACAGACAACTAACTACACTGCACCCTGCGGTTTGCA
2161 GGGGGCTCCTGCCTGGCTCCCTGCTCCACACCTCCTCTGTGGCTC
2206 AAGGCTTCCTGGATACCTCACCCCCATCCCACCCATAATTCTTAC
2251 CCAGAGCATGGGGTTGGGGCGGAAACCTGGAGAGAGGGACATAGC
2296 CCCTCGCCACGGCTAGAGAATCTGGTGGTGTCCAAAATGTCTGTC
2341 CAGGTGTGGGCAGGTGGGCAGGCACCAAGGCCCTCTGGACCTTTC
2386 ATAGCAGCAGAAAAGGCAGAGCCTGGGGCAGGGCAGGGCCAGGAA
2431 TGCTTTGGGGACACCGAGGGGACTGCCCCCCACCCCCACCATGGT
2476 GCTATTCTGGGGGCTGGGGCAGTCTTTTCCTGGCTTGCCTCTGGCC
2521 AGCTCCCGGCCTCTGGTAGAGTGAGACTTCAGACGTTCTGATGCC
```

Fig. 1 Continued

```
2566  TTCCGGATGTCATCTCTCCCTGCCCCAGGAATGGAAGATGTGAGG
2611  ACTTCTAATTTAAATGTGGGACTCGGAGGGATTTTGTAAACTGGG
2656  GGTATATTTTGGGGAAAATAAATGTCTTTGTAAAAA
```

Fig. 1 Continued

Translated Protein-Frame: 2-Nucleotide 2 to 1324
Mz5004 12/16/99

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    46
       TGCAGCGCGTGCGTGTAGCGGACGAGGGCAGCTTCACCTGCTTCG
       aAlaAlaArgAlaCysSerGlyArgGlyGlnLeuHisLeuLeuAr
    91
       TGAGCATCCGGGATTTCGGCAGCGCTGCCGTCAGCCTGCAGGTGG
       gGluHisProGlyPheArgGlnArgCysArgGlnProAlaGlyGl
   136
       CCGCTCCCTACTCGAAGCCCAGCATGACCCTGGAGCCCAACAAGG
       yArgSerLeuLeuGluAlaGlnHisAspProGlyAlaGlnGlnGl
   181
       ACCTGCGGCCAGGGGACACGGTGTGACCATCACGTGCTCCAGCTA
       yProAlaAlaArgGlyHisGlyValThrIleThrCysSerSerTy
   226
       CCAGGGCTACCCTGAGGCTGAGGTGTTCTGGCAGGATGGGCAGGG
       rGlnGlyTyrProGluAlaGluValPheTrpGlnAspGlyGlnGl
   271
       TGTGCCCCTGACTGGCAACGTGACCACGTCGCAGATGGCCAACGA
       yValProLeuThrGlyAsnValThrThrSerGlnMetAlaAsnGl
   316
       GCAGGGCTTGTTTGATGTGCACAGCATCCTGCGGGTGGTGCTGGG
       uGlnGlyLeuPheAspValHisSerIleLeuArgValValLeuGl
   361
       TGCAAATGGCACCTACAGCTGCCTGGTGCGCAACCCCGTGCTGCA
       yAlaAsnGlyThrTyrSerCysLeuValArgAsnProValLeuGl
   406
       GCAGGATGCGCACAGCTCTGTCACCATCACACCCCAGAGAAGCCC
       nGlnAspAlaHisSerSerValThrIleThrProGlnArgSerPr
   451
       CACAGGAGCCGTGGAGGTCCAGGTCCCTGAGGACCCGGTGGTGGC
       oThrGlyAlaValGluValGlnValProGluAspProValValAl
   496
       CCTAGTGGGCACCGATGCCACCCTGCACTGCTCCTTCTCCCCCGA
       aLeuValGlyThrAspAlaThrLeuHisCysSerPheSerProGl
   541
       GCCTGGCTTCAGCCTGACACAGCTCAACCTCATCTGGCAGCTGAC
       uProGlyPheSerLeuThrGlnLeuAsnLeuIleTrpGlnLeuTh
   586
       AGACACCAAACAGCTGGTGCACAGTTTCACCGAAGGCCGGGACCA
       rAspThrLysGlnLeuValHisSerPheThrGluGlyArgAspGl
   631
       GGGCAGCGCCTATGCCAACCGCACGGCCCTCTTCCCGGACCTGCT
       nGlySerAlaTyrAlaAsnArgThrAlaLeuPheProAspLeuLe
   676
       GGCACAAGGCAATGCATCCCTGAGGCTGCAGCGCGTGCGTGTGGC
       uAlaGlnGlyAsnAlaSerLeuArgLeuGlnArgValArgValAl
   721
       GGACGAGGGCAGCTTCACCTGCTTCGTGAGCATCCGGGATTTCGG
       aAspGluGlyS rPheThrCysPheValSerIleArgAspPheGl
```

Fig. 2

```
766
    CAGCGCTGCCGTCAGCCTGCAGGTGGCCGCTCCCTACTCGAAGCC
    ySerAlaAlaValSerLeuGlnValAlaAlaProTyrSerLysPr
811
    CAGCATGACCCTGGAGCCCAACAAGGACCTGCGGCCAGGGGACAC
    oSerMetThrLeuGluProAsnLysAspLeuArgProGlyAspTh
856
    GGTGACCATCACGTGCTCCAGCTACCGGGGCTACCCTGAGGCTGA
    rValThrIleThrCysSerSerTyrArgGlyTyrProGluAlaGl
901
    GGTGTTCTGGCAGGATGGGCAGGGTGTGCCCCTGACTGGCAACGT
    uValPheTrpGlnAspGlyGlnGlyValProLeuThrGlyAsnVa
946
    GACCACGTCGCAGATGGCCAACGAGCAGGGCTTGTTTGATGTGCA
    lThrThrSerGlnMetAlaAsnGluGlnGlyLeuPheAspValHi
991
    CAGCGTCCTGCGGGTGGTGCTGGGTGCGAATGGCACCTACAGCTG
    sSerValLeuArgValValLeuGlyAlaAsnGlyThrTyrSerCy
1036
    CCTGGTGCGCAACCCCGTGCTGCAGCAGGATGCGCACGGCTCTGT
    sLeuValArgAsnProValLeuGlnGlnAspAlaHisGlySerVa
1081
    CACCATCACAGGGCAGCCTATGACATTCCCCCCAGAGGCCCTGTG
    lThrIleThrGlyGlnProMetThrPheProProGluAlaLeuTr
1126
    GGTGACCGTGGGGCTCTCTGTCTGTCTCATTGCACTGCTGGTGGC
    pValThrValGlyLeuSerValCysLeuIleAlaLeuLeuValAl
1171
    CCTGGCTTTCGTGTGCTGGAGAAAGATCAAACAGAGCTGTGAGGA
    aLeuAlaPheValCysTrpArgLysIleLysGlnSerCysGluGl
1216
    GGAGAATGCAGGAGCCGAGGACCAGGATGGGGAGGGAGAAGGCTC
    uGluAsnAlaGlyAlaGluAspGlnAspGlyGluGlyGluGlySe
1261
    CAAGACAGCCCTGCAGCCTCTGAAACACTCTGACAGCAAAGAAGA
    rLysThrAlaLeuGlnProLeuLysHisSerAspSerLysGluAs
1306
    TGATGGACAAGAAATAGCCTGACCATGAGGACCAGGGAGCTGCTA
    pAspGlyGlnGluIleAla
1351
    CCCCTCCCTACAGCTCCTACCCTCTGGCTGCAATGGGGCTGCACT
1396
    GTGAGCCCTGCCCCCAACAGATGCATCCTGCTCTGACAGGTGGGC
1441
    TCCTTCTCCAAAGGATGCGATACACAGACCACTGTGCAGCCTTAT
1486
    TTCTCCAATGGACATGATTCCCAAGTCATCCTGCTGCCTTTTTTC
1531
    TTATAGACACAATGAACAGACCACCCACAACCTTAGTTCTCTAAG
1576
    TCATCCTGCCTGCTGCCTTATTTCACAGTACATACATTTCTTAGG
1621
    GACACAGTACACTGACCACATCACCACCCTCTTCTTCCAGTGCTG
1666
    CGTGGACCATCTGGCTGCCTTTTTTCTCCAAAAGATGCAATATTC
```

Fig. 2 Continued

```
1711
AGACTGACTGACCCCCTGCCTTATTTCACCAAAGACACGATGCAT
1756
AGTCACCCCGGCCTTGTTTCTCCAATGGCCGTGATACACTAGTGA
1801
TCATGTTCAGCCCTGCTTCCACCTGCATAGAATCTTTTCTTCTCA
1846
GACAGGGACAGTGCGGCCTCAACATCTCCTGGAGTCTAGAAGCTG
1891
TTTCCTTTCCCCTCCTTCCTCCTCTTGCTCTAGCCTTAATACTGG
1936
CCTTTTCCCTCCCTGCCCCAAGTGAAGACAGGGCACTCTGCGCCC
1981
ACCACATGCACAGCTGTGCATGGAGACCTGCAGGTGCACGTGCTG
2026
GAACACGTGTGGTTCCCCCCTGGCCCAGCCTCCTCTGCAGTGCCC
2071
CTCTCCCCTGCCCATCCTCCCCACGGAAGCATGTGCTGGTCACAC
2116
TGGTTCTCCAGGGGTCTGTGATGGGGCCCCTGGGGGGTCAGCTTCT
2161
GTCCCTCTGCCTTCTCACCTCTTTGTTCCTTTCTTTTCATGTATC
2206
CATTCAGTTGATGTTTATTGAGCAACTACAGATGTCAGCACTGTG
2251
TTAGGTGCTGGGGGCCCTGCGTGGGAAGATAAAGTTCCTCCCTCA
2296
AGGACTCCCCATCCAGCTGGGAGACAGACAACTAACTACACTGCA
2341
CCCTGCGGTTTGCAGGGGGCTCCTGCCTGGCTCCCTGCTCCACAC
2386
CTCCTCTGTGGCTCAAGGCTTCCTGGATACCTCACCCCCATCCCA
2431
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2476
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2521
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2566
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2611
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2656
ACCCCCACCATGGTGCTATTCTGGGGCTGGGGCAGTCTTTTCCTG
2701
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2746
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2791
TGGAAGATGTGAGGACTTCTAATTTAAATGTGGGACTCGGAGGGA
2836
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2881
AAAAA
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Fig. 2 Continued

Translated Protein 534 aa-Frame: 3-Nucleotide 60 to 1661
2/14/00

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    91
       GTGTGCATGTGGGTGCAGCCCTGGGAGCACTGTGGTTCTGCCTCA
       lyValHisValGlyAlaAlaLeuGlyAlaLeuTrpPheCysLeuT
   136
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       hrGlyAlaLeuGluValGlnValProGluAspProValValAlaL
   181
       TGGTGGGCACCGATGCCACCCTGTGCTGCTCCTTCTCCCCTGAGC
       euValGlyThrAspAlaThrLeuCysCysSerPheSerProGluP
   226
       CTGGCTTCAGCCTGGCACAGCTCAACCTCATCTGGCAGCTGACAG
       roGlyPheSerLeuAlaGlnLeuAsnLeuIleTrpGlnLeuThrA
   271
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       spThrLysGlnLeuValHisSerPheAlaGluGlyGlnAspGlnG
   316
       GCAGCGCCTATGCCAACCGCACGGCCCTCTTCCCGGACCTGCTGG
       lySerAlaTyrAlaAsnArgThrAlaLeuPheProAspLeuLeuA
   361
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       laGlnGlyAsnAlaSerLeuArgLeuGlnArgValArgValAlaA
   406
       ACGAGGGCAGCTTCACCTGCTTCGTGAGCATCCGGGATTTCGGCA
       spGluGlySerPheThrCysPheValSerIleArgAspPheGlyS
   451
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   496
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   541
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       alThrIleThrCysSerSerTyrGlnGlyTyrProGluAlaGluV
   586
       TGTTCTGGCAGGATGGGCAGGGTGTGCCCCTGACTGGCAACGTGA
       alPheTrpGlnAspGlyGlnGlyValProLeuThrGlyAsnValT
   631
       CCACGTCGCAGATGGCCAACGAGCAGGGCTTGTTTGATGTGCACA
       hrThrSerGlnMetAlaAsnGluGlnGlyLeuPheAspValHisS
   676
       GCATCCTGCGGGTGGTGCTGGGTGCAAATGGCACCTACAGCTGCC
       erIleLeuArgValValLeuGlyAlaAsnGlyThrTyrSerCysL
   721
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       euValArgAsnProValLeuGlnGlnAspAlaHisSerSerValT
```

Fig. 3

```
766
CCATCACACCCCAGAGAAGCCCCACAGGAGCCGTGGAGGTCCAGG
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811
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alProGluAspProValValAlaLeuValGlyThrAspAlaThrL
856
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euArgCysSerPheSerProGluProGlyPheSerLeuAlaGlnL
901
TCAACCTCATCTGGCAGCTGACAGACACCAAACAGCTGGTGCACA
euAsnLeuIleTrpGlnLeuThrAspThrLysGlnLeuValHisS
946
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erPheThrGluGlyArgAspGlnGlySerAlaTyrAlaAsnArgT
991
CGGCCCTCTTCCCGGACCTGCTGGCACAAGGCAATGCATCCCTGA
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1036
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1081
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1126
TGGCCGCTCCCTACTCGAAGCCCAGCATGACCCTGGAGCCCAACA
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1171
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ysAspLeuArgProGlyAspThrValThrIleThrCysSerSerT
1216
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1261
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1306
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1351
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1486
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1531
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ysIleLysGlnSerCysGluGluGluAsnAlaGlyAlaGluAspG
1576
AGGATGGGGAGGGAGAAGGCTCCAAGACAGCCCTGCAGCCTCTGA
lnAspGlyGluGlyGluGlySerLysThrAlaLeuGlnProLeuL
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Fig. 3 Continued

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1621
     AACACTCTGACAGCAAAGAAGATGATGGACAAGAAATAGCCTGAC
     ysHisSerAspSerLysGluAspAspGlyGlnGluIleAla
1666
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1711
     CTGGCTGCAATGGGGCTGCACTGTGAGCCCTGCCCCCAACAGATG
1756
     CATCCTGCTCTGACAGGTGGGCTCCTTCTCCAAAGGATGCGATAC
1801
     ACAGACCACTGTGCAGCCTTATTTCTCCAATGGACATGATTCCCA
1846
     AGTCATCCTGCTGCCTTTTTTCTTATAGACACAATGAACAGACCA
1891
     CCCACAACCTTAGTTCTCTAAGTCATCCTGCCTGCTGCCTTATTT
1936
     CACAGTACATACATTTCTTAGGGACACAGTACACTGACCACATCA
1981
     CCACCCTCTTCTTCCAGTGCTGCGTGGACCATCTGGCTGCCTTTT
2026
     TTCTCCAAAAGATGCAATATTCAGACTGACTGACCCCCTGCCTTA
2071
     TTTCACCAAAGACACGATGCATAGTCACCCCGACCTTGTTTCTCC
2116
     AATGGCCGTGATACACTAGTGATCATGTTCAGCCCTGCTTCCACC
2161
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2206
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Fig. 3 Continued

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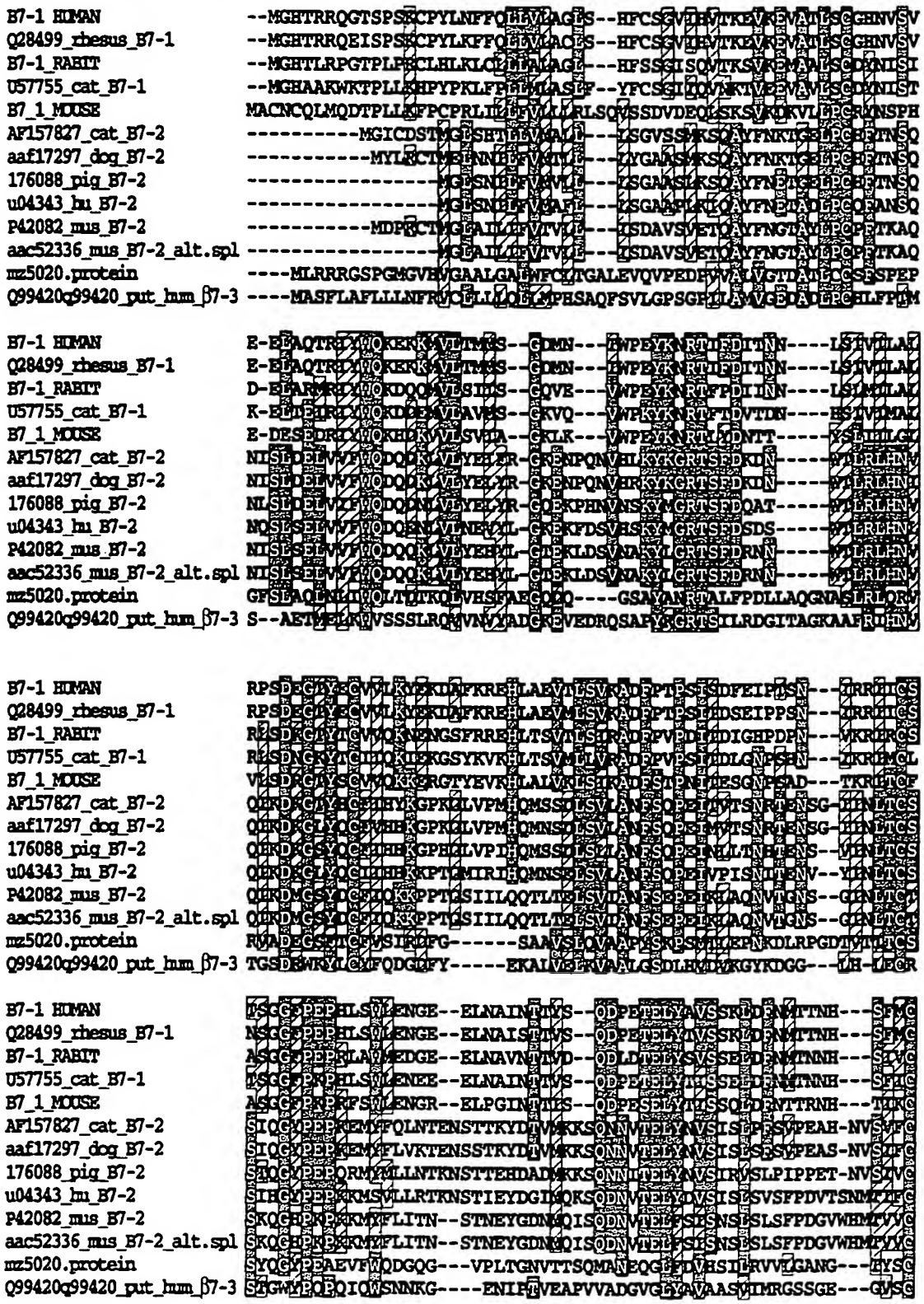

Fig. 4

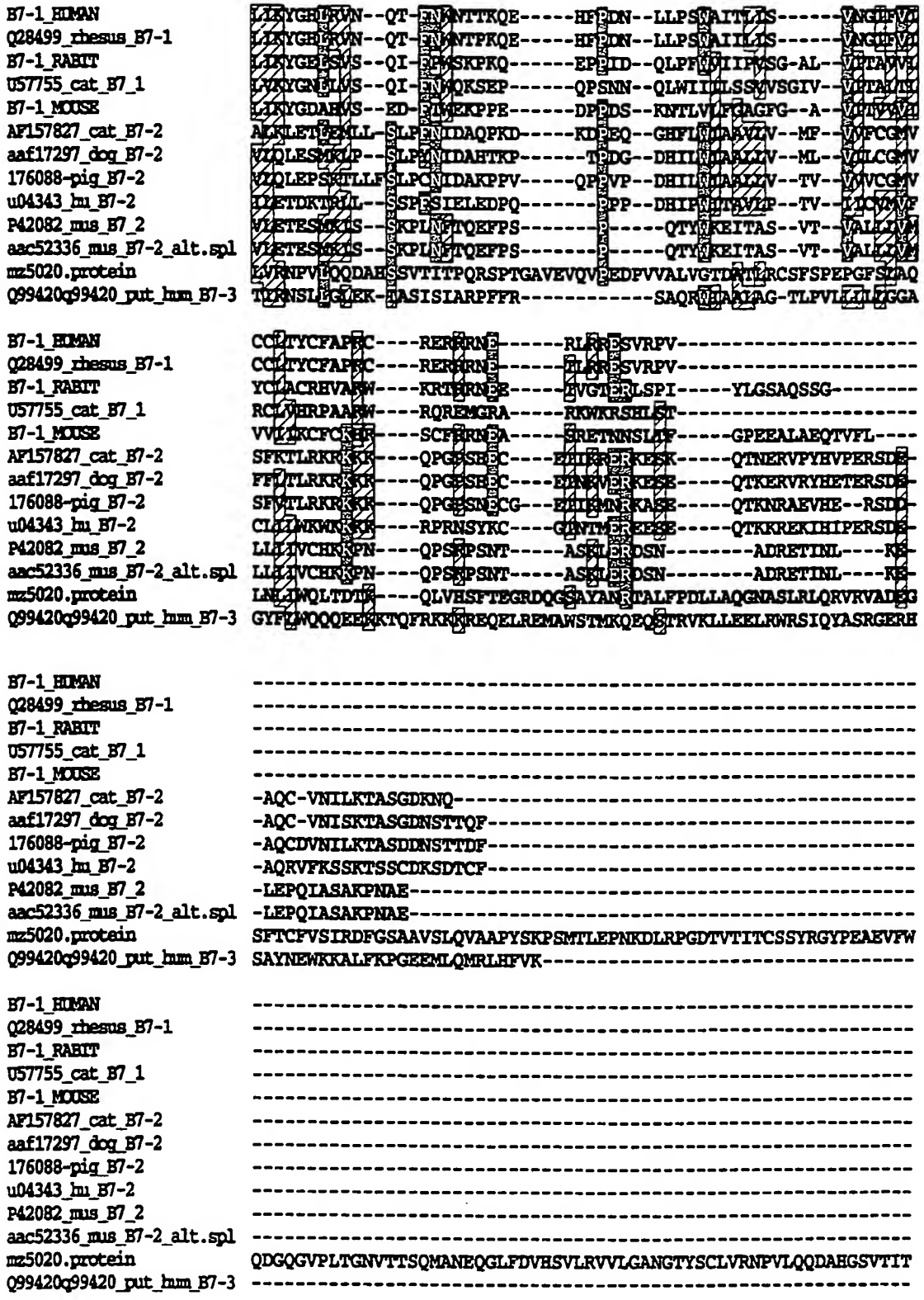

Fig. 4 Continued

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B7-1_MOUSE                ----------------------------------------------------------
AF157827_cat_B7-2         ----------------------------------------------------------
aaf17297_dog_B7-2         ----------------------------------------------------------
176088-pig_B7-2           ----------------------------------------------------------
u04343_hu_B7-2            ----------------------------------------------------------
P42082_mus_B7_2           ----------------------------------------------------------
aac52336_mus_B7-2_alt.spl ----------------------------------------------------------
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Q99420q99420_put_hum_B7-3 ----------------------------------------------------------

B7-1_HUMAN                ------------------
Q28499_rhesus_B7-1        ------------------
B7-1_RABIT                ------------------
U57755_cat_B7_1           ------------------
B7-1_MOUSE                ------------------
AF157827_cat_B7-2         ------------------
aaf17297_dog_B7-2         ------------------
176088-pig_B7-2           ------------------
u04343_hu_B7-2            ------------------
P42082_mus_B7_2           ------------------
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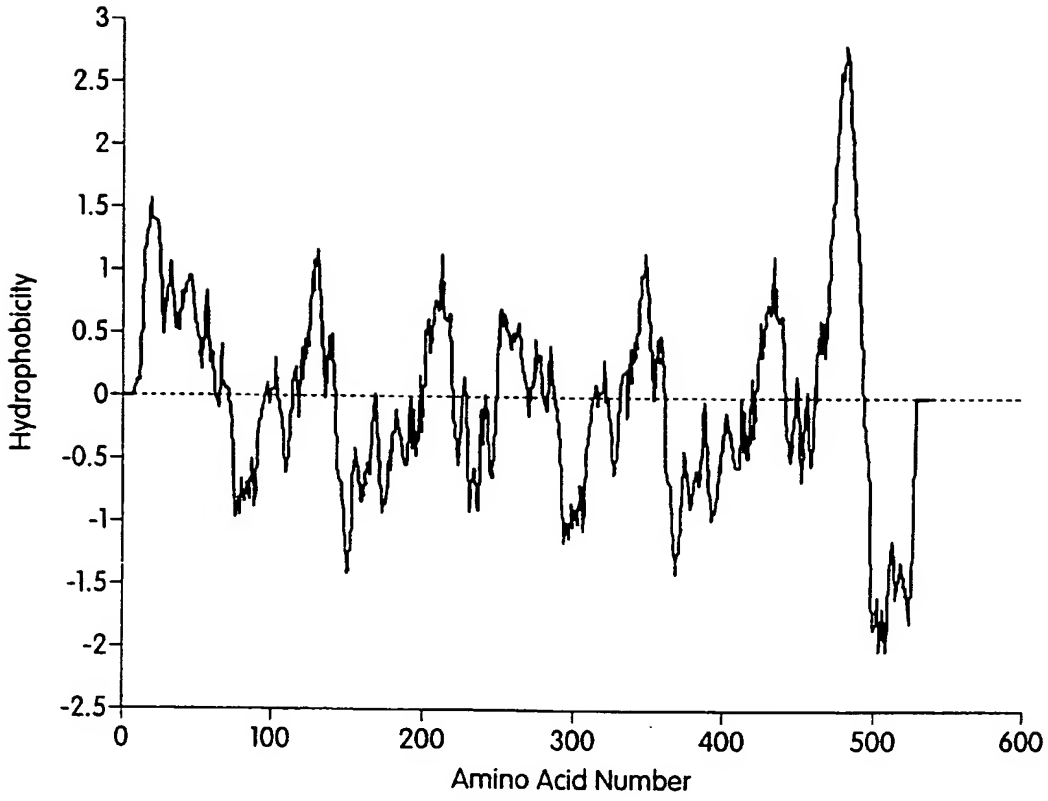
Fig. 4 Continued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2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
0
100
200
300
400
500
600
Amino Acid Number

Fig. 5